SCREENING OF PHYTOCHEMICAL AND PROTEIN DEGRDATION ABILITY OF THE PLANTS *Milleta pinnata.*

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ABSTRACT

The preliminary investigation of phytochemical analysis revealed the presence of carbohydrate, protein, lipids, saponins, alkaloids, phenol and tannins, terepenoids and flavanoids were performed in *Milleta pinnata.* The protein degradation capacity of the both samples were analysed.

Key words: Phytochemicals, protein degradation and *Milleta pinnata.*

INTRODUCTION:

Milleta pinnata (pungai)is a specis of a tree in pea family. Native in topical and temperate Asia including part of India, China, Japan, Malashiya, Australia and Pacific islands. The leaf extract of *milletia pinnata* cures digestion, dysentery, gastric problems and cold [1]. Leaf decoction is used for beri-beri treatment.paste of leaves are used for piles.leaf extract of *Millettia pinnata* are effective larvicide [2]. Mulched pruning from *Millettia pinnata* can be utilized as organic fertilizer, high protein animal stock feed or biomass for heat and power generations. Recent studies have shown some potential for biocidel activity against V.cholerae and E.coli.

MATERIALS AND METHODS:

Pungai oot were collected from thiruvallur(latitude-13.120067 and longitude-79.915422). The collected root was washed with water and rinsed with distilled water.

About 10g of root was taken in 100ml of double distilled water and boiled for five minutes.Then it was filtered using wattmann filter paper twice and root extract was collected.

The root extract of *pungam* tree add with 300µl molisch's reagent with few drops of sulphuric acid.Formation of reddish colour indicats the presence of carbohydrate. The root extract of *pungam* tree addd with 2ml of distilled water and the mixture is vigorously shaken.The formation of stable broth indicates the presence of saponins.

The *pungam* tree extract add 1ml of acetic acid and 300µl of 10% of ferric chloride.Then add few drops of sulphuric acid.The formation of brown ring indicates the presence of cardiac glycosides. The root extract of *pungam tree* add 1ml of distilled water and 300µl of Ninhydrin reagent then boil it for 10 minutes.dark purple colour formation indicates the presence of protein.

The pungam tree root extract about 300µl added with 1ml of ammonia and sulphuric acid.Disappearance of yellow colour indicates the presence of flavanoids. Pungam tree root extract about 300µl added with 2ml of ferric chloride.Th reddish brown colour formation indicates presence of phenols [3].

The root extract of pungam tree of 300 µl added with 2ml of chloroform and then sulphuric acid(3ml)added to layer.The reddish brown colour formation indicates psence of terepenoids. The pungam tree root extract of 300µl was added to few drops of mayers reagent in the test tube.Formation of white or pale yellow precipitate indicates the presence of alkaloids. Plant root extract was centrifuged 10,000rpm for 10 minutes. The supernatant was collcted an given for FTIR studies in chemical engineering department, Anna University. Powder form of root sample was given for HR-LCMS studies(analysis of compounds) in IIT Bombay department of SAIF [4].

The reaction mixture was consisting of test extract at different concentration and 1% aqueous solution of bovine albumin fraction. The sample were incubated at 37 ºC for 20 mins and then heated at70 ºC for 10 minutes.after cooling the samples,th turbidity was measured by UV-Visible spectrometer at 600nm.(Mizushima et al.,1968)(Elias et al.,1988)percent inhibition of protein denaturation was calculated as follows.

Percentage incubation=(Abscontrol-Abssample) x 100/Abscontrol

RESULTS AND DISCUSSION

The preliminary investigation of phytochemical analysis revealed the presence of carbohydrate, protein, lipids, saponins, alkaloids, phenol and tannins, terepenoids and flavanoids has been given in the table (1).

TABLE 1- Phytochmical analysis of aqueous root extract of samples.

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Phytochemical Analysis	***Milleta pinnata***
	Positive/Negative
Cardiac glycoside	+ve
Ninhydrin test	+ve
Steroid test	+ve
Sponins test	+ve
Mayers test	+ve
Phenols and tannins	+ve
Terepnoids	+ve
Flavanoids	+ve

The result were good and coloue intensity was great.

TABLE 2-FTIR (Root extract of *Millentia pinnata*)

Functional groups	**Transmittance**
O-H stretching vibration (often sharp)	3459.9
N-H stretching(amino acid)	2361.2
O-H stretching vibration (sulphuric acid)	2343.7
C-I deformation vibration (primary amides)	44.1-mass
C=C C C stretching vibration (alkalines,diazoktone)	2092.1

C-I deformation vibration (alcohols,ethers,ester)	87.1-mass
C=C(vinyl ether,acrlyte)	1638.2
C-I deformation vibration (aromatic)	52.8-mass
C-H (free alcohol,aldehydes,acetates, Ketons)	1410.8
C-I deformation vibration (pyrrol carbonyl derevatives)	94.7-mass
C-H twisting vibrations (vinyl hydrocarbons)	670.0
C-I deformation vibration(pyranes,furanes)	81.4-mass

HR-LCMS:

The following components isotectorigenin trimethyl ether, dihydrosphingosine, deoxyandirobin, ala tyr lys,ipecac(emetine), 17-epiestriol,calotropin, cer(d18:0/16:0) where present in the root.

HRBC membrane are similar to lysomal membrane components the prevention of hat induced by HRB membrane lysis is taken as measure of anti-inflamatory.the results show that the silver nanoparticle transdermal film and nanogel show significant anti-inflammatory activity at the concentration value of 400µl(IC50-TDF-4)which is comparable to standard aspirin. The anti – inflammatory activity of extract was concentration dependent. The extract exhibited membrane stabilization effect by incubating heat induced lysas of RBC membrane alone study, The film showed good anti-inflammatory properties [5].

Protein denaturation is a process in which protein concentration thus tertiary similar amd secondary structure by the application of external stress on compound such as strong acid or base. Most biological protein lose their biological function when denatured. Denaturation of protein is well documented in the case of inflammatory. As part of the investigation of the mechanism of anti- inflammatory activity, ability of transdermal film to incubate protein denaturation was studied. It was effective incubating heat induced albumin denaturation. The

maximum incubation of transdermal film and aspirin, a standard anti-inflammatory drug showed the maximum incubation 94% at concentration of 150µl/ml.

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